

Nirupam Gupta

Postdoctoral Research Fellow
Department of Computer Science
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Education -

Ph.D. in Mechanical Engineering, 2018
University of Maryland - College Park.
Dissertation: Privacy in Distributed Multi-Agent Collaboration: Consensus and Optimization.
Advisor: Nikhil Chopra.

B.Tech. in Electrical Engineering, 2013
Indian Institute of Technology - Delhi.
Thesis: Automatic Cardiac View Classification of Echocardiogram.

Employment History-

Postdoctoral Fellow, Jan' 2019 - present
Department of Computer Science, Georgetown University.
Sponsor: Nitin H. Vaidya.

Summer Internships, 2011, and 2012
Texas Instruments India.

Voluntary Services -

1. Reviewer for IEEE journals; Transactions on Automatic Control (TAC), Transactions on Control of Networked Systems (TCNS), Control Systems Letters (L-CSS), Transactions on Signal Processing (TSIP).
2. Reviewer for the Elsevier journal Automatica.
3. Program committee member -
 - Dependable and Secure Machine Learning (DSML) workshop at the 49th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) 2020.

Research Areas -

1. Fault-tolerance in distributed optimization, machine learning and control systems.
2. Privacy preservation in distributed computing, and optimization.
3. Robust optimization and machine learning.

Scholastic Achievements -

1. All India rank 190 (*out of 380,000*) in JEE (Joint Entrance Examination) 2009.

2. All India rank 130 (*out of 960,000*) in AIEEE (All India Engineering Entrance Examination) 2009.
3. Merit Scholarship at the Indian Institute of Technology Delhi, academic year 2009 - 10.
4. India CBSE (Central Board of Secondary Education) scholarship from 2009 - 13.

Journal Publications -

1. **Preserving Statistical Privacy in Distributed Optimization**
N.G., Shripad Gade, Nikhil Chopra, and Nitin H. Vaidya. The IEEE Control Systems Letters 2020. [*Under review*]
2. **On Content Modification Attacks in Bilateral Teleoperation Systems**
Yimeng Dong, N.G., and Nikhil Chopra. The IEEE Transactions on Control Systems and Technology 2018.
3. **Content Modification Attacks on Consensus Seeking Multi-Agent System with Double-Integrator Dynamics**
Yimeng Dong, N.G., and Nikhil Chopra. The AIP Chaos - Journal of Nonlinear Science 2016.

Conference Publications -

1. **Fault-Tolerance in Distributed Optimization: The Case of Redundancy**
N.G., and Nitin H. Vaidya. The 39th ACM Symposium on Principles of Distributed Computing (PODC 2020). [*Accepted*]
2. **Iterative Pre-Conditioning to Expedite the Gradient-Descent Method**
Kushal Chakraborty, N.G., and Nikhil Chopra. The 2020 American Control Conference (ACC). [*Accepted*]
3. **On Distributed Solution of Ill-Conditioned System of Linear Equations under Communication Delays**
Kushal Chakraborty, N.G., and Nikhil Chopra. The Dec' 2019 Indian Control Conference (ICC).
4. **Byzantine Fault-Tolerant Parallelized Stochastic Gradient Descent for Linear Regression**
N.G., and Nitin H. Vaidya. The 2019 Allerton Conference at University of Illinois at Urbana-Champaign.
5. **Statistical Privacy in Distributed Average Consensus: Bounded Real Inputs**
N.G., Jonathan Katz, and Nikhil Chopra. The 2019 American Control Conference (ACC).
6. **Model-Based Encryption: Privacy of States in Networked Control Systems**
N.G., and Nikhil Chopra. The 2018 Allerton Conference at University of Illinois at Urbana-Champaign.
7. **Privacy in Distributed Average Consensus**
N.G., Jonathan Katz, and Nikhil Chopra. The 2017 World Congress of IFAC.
8. **Robustness of distributive double-integrator consensus to loss of graph connectivity**
N. G., Yimeng Dong, and Nikhil Chopra. The 2017 American Control Conference (ACC).

9. **Confidentiality in Distributed Average Information Consensus**
N.G., and Nikhil Chopra. The 2016 IEEE 55th Conference on Decision and Control (CDC).
10. **On Content Modification Attacks in Bilateral Teleoperation Systems**
Yimeng Dong, N.G., and Nikhil Chopra. The 2016 American Control Conference (ACC).
11. **Stability analysis of a two-channel feedback networked control system**
N.G., and Nikhil Chopra. The 2016 Indian Control Conference (ICC).

Programming Skills -

C, C++, Java, Python, Ruby, Shell scripting
PyTorch, MATLAB, CORE

References -

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Nitin H. Vaidya
Professor, Department of Computer Science (McDevitt Chair)
Georgetown University, Washington D.C., USA
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Jonathan Katz
Professor, Department of Computer Science (Eminent Scholar in Cybersecurity)
George Mason University, Fairfax, Virginia, USA
katz@gmu.edu